Remarks

Applicants thank the Examiner for the careful examination of this application and the clear explanation of the rejections.

Concerning the rejection under 35 USC 112, applicant deletes the word “successive” from independent claim 37. While drafting claim 37, applicant believed that the word “successive’ found support in Figure 1 and in paragraph [0019] with the YES output of step 14, ANOTHER BAND?, returning to step 12, TUNE FILTER TO SELECTED BAND, and forming a loop with step 13, MAKE PASSIVE OBSERVATIONS. The word “successive” appeared to fit the concept of tuning to a selected band 12, making a passive observation of the selected band 13, and repeating those two steps for another band 14. Since the word “successive” did not appear in the application as filed, applicant deletes the word from the independent claim.

The amended independent claim obviates the rejection under 35 USC 103. The amended and previously presented claims "particularly point out and distinctly claim the subject matter the applicant regards as his invention."

Claim 37 defines a process of selecting a wide band channel.

The process determines that a wide band channel should be selected.

The process tunes a filter to narrow band channels within one wide band channel.

The process passively observes each of the narrow band channels for at least one of quality, interference, and received signal strength indication.

The process sums the observations of the all of the narrow band channels of the one wide band channel.

The process repeats the steps of tuning, observing and summing for another wide band channel.

The process selects the one or the other wide band channel for wireless communication between devices based on the summed observations of each wide band channel.

In contrast, US 5,907,812 to Van De Berg discloses a system allocating communication channels between first and second communication systems over a common radio frequency band R, Figures 1, 2, 4, 5, and 6. A first radio communication system has a frequency bandwidth of B_{c1}, and for the first system the frequency band R is divided into 25 fixed radio channels C^1_1 through C^1_{25}. A second radio communication system has a frequency bandwidth of B_{c2}, different from or greater than bandwidth B_{c1}, and for the second system the frequency band R is divided into five fixed radio channels C^2_1 through C^2_5.

The problem faced by the Van De Berg patent is depicted in Figure 1 and was an inefficient allocation of radio channels in frequency band R for the first and second systems. If the first system used any of the channels in one channel of the second system, the second system could not use that channel, even if there were other channels not used by the first system in which a channel of the second system could operate. The Van De Berg patent provides a solution to this inefficiency by scanning the channels of the first system for use by the first system, and if sufficient adjacent channels of the first system are available, allocating a channel of the second system to those adjacent channels.

The chart of Figure 5 introduces the complication of certain first system channels being unavailable due to interference, which interference is indicated by an "X". The disclosed scanning additionally detects interference together with use by the first system in seeking adjacent first system channels available for use by the second system.

Referring to Figure 7, the patent explains the process by which these determinations are made. At step 2, the band R is discreetly scanned at each channel of the first system. At step 3, any use by the first system or interference at that channel is detected. At step 4, a determination is made whether that channel is interference (including use by the first system) free. If no, the process returns to the scan step 2.

If yes, the process forms a concatenation of bands, step 5, that are essentially free of use or interference. In step 6, the process determines whether the concatenation of bands covers a bandwidth at least equal to the

communication band of the second system. If no, the process returns to the scan step 2. If yes, the process stops the scan, step 7, and establishes communication, step 8. The second system can thus communicate over any combination of adjacent first system channels in radio frequency band R that is wide enough for a second system channel.

The processes of Figures 8 and 9 introduce the concepts of different levels of acceptable and unacceptable interference.

A word search of the specification of the patent to Van De Berg failed to locate any of the words “sum”, “combine”, or “add”. There is no mention or suggestion of summing the interference detected in each of the channels of the first system. The determination of the presence or absence of interference detected in each channel of the first system is independent of the determination of the presence of interference detected in any other channel of the first system.

The Van De Berg patent provides no disclosure or suggestion of operation beyond detecting the interference, step 3, Figure 7, in each channel of the first system and continuing the scanning depending on whether: the channel is interference free, step 4, Figure 7; the interference is less than a second level, step 14, Figure 8; the interference is less than a first level, step 15, Figure 8; or the interference is less than a communication level, step 25, Figure 9.

The Van De Berg patent also provides no disclosure or suggestion of selecting one or another wide band channel for wireless communication

between devices based on the summed observations of each wide band channel. On the contrary, the Van De Berg patent only selects the available adjacent channels of the first system in the one radio frequency band R for establishing communication by the second system.

A person of ordinary skill in this art learns from the Van De Berg patent to scan and detect interference in each of plural adjacent channels and make a determination of proceeding if the interference in that channel is below a certain level. If sufficient adjacent channels are sufficiently free of interference, a second system can use those adjacent channels to establish its own communication channel.

Applicant cannot locate any disclosure in the Van De Berg patent that supports the conclusion in the Action that:

> Berg clearly discloses the feature(s) as indicated above as evidenced by the fact that one of ordinary skill in the art would clearly recognize(sic). However, the examiner maintains that the feature(s) summing the observations was well known in the art, as taught by Solonaho.

US 6,594,495 to Salonaho addresses the problem of balancing loads of a base station in an interference limited radio system. Prior radio systems did not balance the load at the base station transmitter which resulted in an unstable situation in which the minimum requirements of a connection could not be met and disconnections resulted.

The solution presented by the Salohano patent is a process of:

i. forming a combined signal strength of one or more desired signals;

ii. forming a combined total strength of the interferences and one or more desired signals;

iii. forming a load result measuring the load by comparing the signal strength and the total strength;

iv. comparing the load result with a threshold value; and

v. changing the telecommunication rate until the load is balanced. Column 2, lines 29-39

The patent to Salonaho thus discloses increasing or decreasing the load (transmission rate) of a connection or a cell of an interference limited (CDMA cellular) radio system. In doing so, the disclosure in the Salonaho patent teaches combining desired signal strengths and teaches combining strengths of interferences and desired signals for only that connection or cell.

The disclosure in the Salonaho patent is unrelated to selecting between wideband channels, and a person of ordinary skill searching for ways to select between wideband channels would not look to the Salonaho patent for direction.

The Salonaho patent does not passively observe each narrow band channel for quality, interference or received signal strength and sum the observations of the all of the narrow band channels of the one wide band channel. By forming a load result based on a desired signal strength and a combined total strength of interferences and desired signal strength, the Salonaho patent teaches changing the telecommunication rate of only one connection at a time.

The solution expressed in the Salonaho patent does not sum the observations of the all of the narrow band channels of the one wide band

channel, but rather forms a load result by comparing a combined desired signal strength with a combined total strength of interferences and desired signal strength for one connection. The formulas expressed in the specification do not indicate an addition of separately measured interferences and desired signal strength. This combined total strength is apparently the received combined interferences and desired signal strength from an antenna and the receiver circuitry for that connection.

In forming the load result, the Salonaho patent does not sum any observations of quality, interference, or received signal strength for all of any narrow band channels in a wide band channel. The Salonaho patent teaches forming ratios of desired signals and combined desired signals and interferences for one connection to compare to a threshold value to balance a load at a base station transmitter.

The Salonaho patent further does not select between wide band channels for wireless communication between devices based on the summed observations of each wide band channel by repeating the steps of tuning, observing, and summing. The Salonaho patent only changes the telecommunication rate for one connection or a cell at a base station.

The Van De Berg patent teaches independently detecting the interference at each of several channels in one wide band. The Salonaho patent teaches forming a load result from a combined desired signal strength and a combined strength of interferences and desired signal strength to balance the load at one connection or cell. These patents alone or in combination cannot suggest summing the observations of all of the narrow

band channels of one wide band channel, repeating the summing for another wide band channel, and selecting the one or the other wide band channel for wireless communication between devices based on the summed observations of each wide band channel.

Claim 37 distinguishes over the disclosures in the patents to Van De Berg and Salonaho with the limitations of tuning a filter to narrow band channels within one wide band channel, passively observing each of the narrow band channels for at least one of quality, interference, and received signal strength indication, summing the observations of the all of the narrow band channels of the one wide band channel, repeating the steps of tuning, passively observing, and summing for another wide band channel, and selecting the one or the other wide band channel for wireless communication between devices based on the summed observations of each wide band channel.

Claim 37stands allowable.

The depending claims also stand allowable as depending from allowable independent claim 37 and as including, in combination with the limitations of the independent claim, additional distinguishing limitations.

Claim 38 requires that the tuning includes tuning a filter to every narrow band channel in the one wide band channel.

Claims 39 requires that the tuning includes tuning a filter to only some of the narrow band channels in the one wide band channel.

The application is in allowable form and the claims distinguish over the cited references. Applicants respectfully request reconsideration or further examination of this application.

Respectfully Submitted,

/Lawrence J Bassuk/

Lawrence J. Bassuk
Reg. No. 29,043
Attorney for Applicant

Texas Instruments Incorporated
P. O. Box 655474, MS 3999
Dallas, Texas 75265
972-917-5458